97-831 ENR
Updated August 24, 1999

Clean Water Act and Total Maximum Daily Loads (TMDLs) of Pollutants

Claudia Copeland
Specialist in Environmental Policy
Environment and Natural Resources Policy Division

Summary

Section 303(d) of the Clean Water Act requires states to identify waters that are impaired by pollution, even after application of pollution controls. For those waters, states must establish a total maximum daily load (TMDL) of pollutants to ensure that water quality standards can be attained. Implementation of this provision has been dormant until recently, when states and EPA were prodded by numerous lawsuits. In August 1999, EPA proposed regulatory changes to strengthen and clarify the TMDL program. The TMDL issue has become controversial, in part because of requirements and costs now facing states to implement this 27-year-old provision of the law. Industries, cities, farmers, and others may be required to use new pollution controls to meet TMDL requirements. Congressional activity to reauthorize the Act, a possibility in the 106th Congress, could include TMDL issues, but the direction for any such action is unclear at this time. This report will be updated as developments warrant.

Background

The Clean Water Act (CWA) contains a number of complex elements of overall water quality management. Foremost is the requirement in section 303 that states establish ambient water quality standards for water bodies, consisting of the designated use or uses of a water body (e.g., recreational, public water supply, or industrial water supply) and the water quality criteria which are necessary to protect the use or uses. Through permitting, states or the Environmental Protection Agency (EPA) impose wastewater discharge limits on individual industrial and municipal facilities to ensure that water quality standards are attained. However, Congress recognized in the Act that, in many cases, pollution controls implemented by industry and cities would be insufficient, due to pollutant contributions from other unregulated sources.

Under section 303(d) of the Act, states must identify lakes, rivers, and streams for which wastewater discharge limits are not stringent enough to achieve established water

quality standards, after implementation of technology-based controls by industrial and municipal dischargers. For each of these waterbodies, a state is required to set a total maximum daily load (TMDL) of pollutants at a level that ensures that applicable water quality standards can be attained and maintained. A TMDL sets the maximum amount of pollution a waterbody can receive without violating water quality standards, including a margin of safety. If a state fails to do this, the Environmental Protection Agency (EPA) is required to develop a priority list for the state and make its own TMDL determination.

Section 303(d) provides the analytical and regulatory means for using water quality standards to upgrade waters that remain polluted after the application of technology-based requirements. A TMDL includes a quantitative assessment of water quality problems, pollution sources, and pollutant reductions needed to restore and protect a river, stream, or lake. TMDLs may address all pollution sources, including point sources such as municipal sewage or industrial plant discharges; nonpoint sources, such as runoff from roads, farm fields, and forests; and naturally occurring sources, such as runoff from undisturbed lands. The complexity and cost of developing a TMDL will vary, depending on the geographic area, number and complexity of pollutants, and distribution of sources.

The TMDL itself does not establish new regulatory controls on sources of pollution. However, when TMDLs are established, municipal and industrial wastewater treatment plants may be required to install new pollution control technology. States and EPA enforce the TMDLs through revisions to existing permits which include the pollutant limits and a schedule for compliance. For waters impaired by nonpoint source runoff, because there are no federal controls over these sources under the Clean Water Act, the primary implementation measures are state-run nonpoint source management programs coupled with state, local, and federal land management programs and authorities. For example, farmers and ranchers may be asked to use alternative methods in their operations to prevent fertilizers and pesticides from reaching rivers. Cities may be required to control and treat runoff from their streets.

Implementation

TMDLs are one element of water quality management programs conducted by states to implement the CWA. Other activities include standard setting, monitoring, permitting, and enforcement. Integrating them with the TMDL program may well be difficult because of factors such as different program purposes, schedules, and even different definitions for key terms. Most states have lacked the resources to do TMDL analyses, which involve complex assessment of point and nonpoint sources to ascribe and quantify environmental effects for particular discharge sources. Baseline water quality monitoring data for the analyses (to identify impaired waters and pollution sources) is limited. EPA has both been reluctant to intervene in the states and has also lacked resources to do so itself. Thus, there has been little implementation of the provision which was enacted in 1972. Until recently, EPA did little even to prod states to identify waters that remain pollution-impaired, much less undertake analyses to develop TMDLs, as required by the Act. Only in 1992 did EPA issue regulations requiring states every 2 years to list waters that do not attain water quality standards and establish TMDLs to restore water quality.

Responding to the failure of both states and EPA to meet these requirements, however, environmental groups have filed nearly 30 lawsuits in the last few years. Environmentalists see implementation of section 303(d) as important both to achieving the

overall goals and objectives of the Act and pressuring EPA and states to address nonpoint and other sources which are responsible for many water quality impairments nationwide but have not been regulated up to this point. Courts in a number of states, have ordered or approved settlements for expeditious development of TMDLs. (See Table 1 for a summary.)

The TMDL litigation falls into five general categories, according to EPA: (1) situations in which a state has failed to perform any section 303(d) activities; (2) situations in which a state has engaged in some but insufficient activities to implement section 303(d); (3) challenges to EPA's listing of impaired waters, TMDL approval decisions or EPA's promulgation of TMDLs; (4) situations in which plaintiffs are using TMDL requirements to achieve other CWA objectives, such as forcing improved water quality monitoring programs; and (5) challenges to the substance or content of TMDLs.

Because of the lawsuits and existing requirements of the law, in August 1997, EPA issued a policy which for the first time called on states to develop long-term schedules for implementing TMDLs. Under that policy, EPA directed states to establish TMDLs in order to meet water quality standards within 8 to 13 years.[1] One observer commented on this time frame, "Whether even this pace can be maintained, and whether it will produce load allocations and plans of sufficient quality to be effective, are legitimate and difficult questions."[2] Development of TMDLs is being initiated at an increasing pace in some states, but most TMDLs remain to be completed.

In August 1999, EPA proposed revisions to the TMDL regulations to clarify and strengthen the program.[3] The proposal sets forth criteria for states, territories, and authorized Indian tribes to identify impaired waters and establish all TMDLs within 15 years. It would require more comprehensive assessments of waterways, detailed cleanup plans, and timetables for implementation. At least two aspects are likely to be controversial: (1) an explicit requirement that waterbodies impaired wholly or in part by nonpoint sources of pollutants be identified and that TMDLs be developed for such waters, and (2) a new requirement for an implementation plan as part of a TMDL. Vigorous challenge to these parts of the proposal is likely to come from states and various industry groups, arguing that such expansion of the current TMDL program is not clearly authorized in the law. EPA believes that it does have ample authority for the proposed changes. A related regulatory proposal made at the same time would require new or significantly expanding sources that discharge into impaired waters to obtain an offset of one-and-one-half their proposed discharge before beginning operation.

The August proposal incorporates many of the recommendations of a Federal Advisory Committee Act (FACA) group which the Agency convened in 1996 to help develop a consistent national program. The group's report, presented in July 1998,

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[1]This is a longer time frame than is being mandated as a result of some of the TMDL litigation. The schedules for TMDLs in 15 lawsuits concluded by consent decrees and settlement agreements range from 4-1/2 years to 12 years.

[2]Houck, Oliver A. "TMDLs, Are We There Yet?: The Long Road Toward Water Quality-Based Regulation under the Clean Water Act." *Environmental Law Review*, v. 27, August 1997 p. 10399.

[3]64 *Federal Register* No. 162, Aug. 23, 1999. pp. 46011-46055.

affirmed the TMDL program's goal of eliminating impairments that cause water quality standard violations and made numerous recommendations for setting priorities, dealing with uncertainties, and requiring TMDL implementation. [4]

The TMDL issue has been extremely controversial. States are concerned that they lack the resources to meet tight deadlines to develop and implement TMDLs. States do not necessarily disagree with implementing the TMDL provisions of the Act; for most, it is a resource capacity question. Further, states say that TMDLs are just one of many components of a state's water quality management program and that they should not necessarily be prioritized over other management elements. Environmentalists are critical that states appear unwilling to commit to aggressive implementation of a program that has existed in the law for 27 years. Industry groups are greatly concerned about impacts of new pollution control requirements. Municipal and industrial point source groups urge states and EPA to ensure that TMDL requirements do not fall disproportionately on their discharges, while possibly failing to address nonpoint source contributions to impaired waters. On the other hand, farm groups and others associated with nonpoint discharges question EPA's authority to include nonpoint source pollution in the TMDL program.

Issues for Congress

TMDL issues are likely to be of interest to policymakers when Congress considers Clean Water Act reauthorization in the future. However, the direction of that consideration is unclear at this time. Interest groups and stakeholders have widely different views on the current program and how to improve it, either administratively or legislatively. So far no legislation has been introduced in Congress to address or modify the TMDL provisions of the Act. A number of issues and options could be addressed.

- **Do nothing at this time**. EPA officials are hopeful that the regulatory changes proposed in August 1999 will achieve improvements to the TMDL program that would not require legislative changes to the Act, since the outcome of the legislative process is uncertain. EPA has not identified specific issues that could only be resolved legislatively, and the advisory group (which was mandated to look at technical issues, not legislative concerns) did not offer recommendations for statutory changes.

- **Strengthen the current program**. Environmentalists' agenda for the TMDL program includes a number of elements to strengthen and clarify the program, including: imposing clear deadlines on states and EPA to carry out section 303(d), as there are no statutory deadlines in current law; make clear that EPA has a non-discretionary duty to act if a state fails to do so and define what EPA actions and/or penalties would follow; and ensure that states periodically update lists of impaired waters, so that TMDL implementation evolves as water quality conditions change. The TMDL program would not be an issue today, environmentalists contend, if states and EPA had incorporated it in the nation's water quality management programs beginning in the 1970s.

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[4]U.S. Environmental Protection Agency. REPORT OF THE FEDERAL ADVISORY COMMITTEE ON THE TOTAL MAXIMUM DAILY LOAD (TMDL) PROGRAM. July 1998. 1 vol. Available at: [http://www.epa.gov/OWOW/tmdl/advisory.html#fdr].

- **Provide flexibility or limit the program**. States which now must prepare and enforce TMDLs and industry groups representing dischargers who could be subject to additional controls may seek more time and flexibility to implement TMDL plans. Many in industry might well favor abolishing the TMDL program, but, short of that, states and industry favor policies that would not commit them to any specific timeframes for establishing and implementing TMDLs, but instead call for schedules to reflect the availability of sound science and resources. Environmentalists respond that section 303(d) currently has so much flexibility that until recently its implementation has been disregarded by states and EPA.

- **Clarify the program's impact on nonpoint sources**. Nonpoint sources (both urban and rural) cause or contribute to water quality impairments throughout the United States. Section 303(d) currently does not specify whether TMDLs should cover nonpoint sources, but EPA's long-standing interpretation is that sources of polluted runoff should be included, along with point sources. To limit TMDL implementation only to point sources would likely impose new and disproportionate pollution control requirements on cities and industries, which have been the traditional focus of the CWA's regulatory requirements. The August 1999 proposed rules would include nonpoint source-impaired waters in the TMDL program. Farming and forestry groups contend that other CWA programs, which are not regulatory, are directed at nonpoint source pollution. These groups favor clarifying the Act to exclude nonpoint sources from the TMDL program, so that they do not bear the costs of implementation and pollution controls.

- **Consider the resource question**. Both EPA and states face significant financial and technical challenges. Based on assessments of the nation's waters, EPA estimates that TMDLs are required for 20,000 pollution-impaired waters nationwide. The Agency projects that the cost to develop plans and begin implementation will be $1 million to $2 million per state, but states believe that costs will be much higher. (Costs to the private sector of implementing controls are likely to be considerably higher but are unknown for now.) EPA has identified financial assistance both from EPA sources and other agencies, including CWA nonpoint pollution management grants and State Revolving Funds, as well as farm bill conservation programs such as the Environmental Quality Incentives Program, but potential needs are greater than available amounts. Congressional action on reauthorization and appropriation bills could focus on the resource issue.

Finally, the recent attention to the TMDL program raises some challenging questions about the quality of the nation's surface waters, those subject to the Clean Water Act. After 27 years of implementing the law, EPA and states acknowledge that a substantial portion of the nation's waters still are impaired or threatened by pollution. The most recent national inventory of water quality reported that nearly 40% of surveyed water bodies remain too polluted for fishing, swimming, and other designated uses.[5] Yet those numbers only represent rivers and lakes actually surveyed annually by state monitoring

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[5]U.S. Environmental Protection Agency. Office of Water. THE QUALITY OF OUR NATION'S WATERS: 1996, EXECUTIVE SUMMARY. April 1998. 1 vol. Report and summary are available at: [http://www.epa.gov/305b/].

programs - typically about one-third of all waters. This leaves unanswered what would be known if all waters were surveyed routinely.

On the other hand, the TMDL assessments now being developed by states are yielding more precise water quality information. These assessments are identifying large numbers of stream segments which still require additional measures before water quality standards are attained. Full implementation of the TMDL process is likely to inform policymakers more completely about conditions nationwide. It is also likely to show that the remaining challenges to achieving the goals of the Clean Water Act are more numerous and difficult than many have assumed.

Table 1. Summary of TMDL Litigation (as of August 1999)

STATES WITH RESPECT TO WHICH EPA IS CURRENTLY UNDER COURT ORDER TO ESTABLISH TMDLs IF STATES DO NOT ESTABLISH TMDLs

Oregon (1986 consent decree)
Alaska (1992 court order)
Georgia (1997 court order)
Calif. (North Coast) (1997 consent decree)
Pennsylvania (1997 consent decree)
Arizona (1997 consent decree)
New Mexico (1997 consent decree)
West Virginia (1997 consent decree)
Delaware (1997 consent decree)
Calif. (Newport Beach) (1997 consent decree)
Washington (1998 consent decree)
Kansas (1998 consent decree)
Alabama (1998 consent decree)
Mississippi (1998 consent decree)
Calif. (Los Angeles) (1999 consent decree)
Virginia (1999 consent decree)
Florida (1999 consent decree)

STATES WITH RESPECT TO WHICH PLAINTIFFS HAVE FILED LITIGATION SEEKING TO COMPEL 303(d) LISTS AND/OR TMDLs

New York
New Jersey
Missouri
Arkansas
Louisiana
Montana
Oregon
Iowa
Maryland
Oklahoma
Colorado
South Dakota
District of Columbia
Wyoming

STATES WITH RESPECT TO WHICH NOTICES OF INTENT TO SUE HAVE BEEN FILED

Idaho (Coeur d'Alene)
California (San Francisco Bay)
California (statewide)
Ohio
Tennessee

TMDL CASES THAT HAVE BEEN DISMISSED

Lake Michigan I (WI, IL, IN, MI) (Scott v. City of Hammond, 530 F.Supp. 288 ((N.D. Ill. 1981)), *aff'd in part, rev'd in part*, 741 F.2d 992 ((7th Cir. 1984)))
Lake Michigan II (related case challenging EPA actions in response to Scott order, case dismissed 1991)
Minnesota (dismissed 1993)
Idaho (EPA motion to dismiss granted 1997)
North Carolina (Joint Stipulation of Dismissal filed June 1998; EPA agreed by letter to ensure development of a TMDL for the Nuese River by date certain)

Source: U.S. Environmental Protection Agency, Office of Water, TMDL Litigation by State, August 1999 [http://www.epa.gov/OWOW/tmdl/lawsuit1.html].